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11	UNITED STATES I	DISTRICT COU	JRT
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15	IN RE HIGH-TECH EMPLOYEE	Master Docke	et No. 11-CV-2509 LHK
16	ANTITRUST LITIGATION		TTS' NOTICE OF MOTION
17	THIS DOCUMENT RELATES TO:	THE EXPER	MOTION TO EXCLUDE RT TESTIMONY OF
18	ALL ACTIONS	MEMORAN	L LEAMER, PH.D., AND DUM OF POINTS AND
19		AUTHORIT THEREOF	IES IN SUPPORT
20		Date:	March 20, 2014 and
21		Time:	March 27, 2014 1:30 p.m.
22		Courtroom: Judge:	8, 4th Floor The Honorable Lucy H. Koh
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28			S.' MOTION TO EXCLUDE EXPERT
		TESTI P. &	MONY OF DR. LEAMER; MEM. OF A. IN SUPPORT – 11-CV-2509 LHK

NOTICE OF MOTION AND MOTION TO EXCLUDE THE EXPERT TESTIMONY OF EDWARD E. LEAMER, PH.D.

PLEASE TAKE NOTICE that on March 20, 2014 at 1:30 p.m. and/or March 27, 2014 at 1:30 p.m., or as soon thereafter as this matter may be heard, Defendants Adobe Systems Inc., Apple Inc., Google Inc., and Intel Corp. ("Defendants"), shall and do hereby move this Court for an order excluding the opinions and testimony of Edward E. Leamer, Ph.D. ("Dr. Leamer"), designated by Plaintiffs as an expert witness in this matter, for his failure to provide reliable, relevant, and admissible testimony under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and Federal Rule of Evidence 702.

This motion is based on this Notice of Motion and Motion, the accompanying Memorandum of Points and Authorities, the accompanying Declaration of Christina J. Brown in Support of Defendants' Joint Motion to Exclude the Expert Testimony of Edward E. Leamer, Ph.D. ("Brown Decl.") and exhibits thereto, the accompanying Declaration of Lauren J. Stiroh, Ph.D. in Support of Defendants' Joint Motion to Exclude the Expert Testimony of Edward E. Leamer, Ph.D. ("Stiroh Decl.") and exhibits thereto, Defendants' Reply Memorandum, the pleadings and files in this action, such arguments and authorities as may be presented at or before the hearing, and such other matters as the Court may consider.

STATEMENT OF ISSUES TO BE DECIDED

Whether Dr. Leamer's expert testimony should be excluded in its entirety because the statistical analysis essential to his opinions regarding impact and damages fails to meet the standards for reliable, relevant, and admissible testimony required by *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and Federal Rule of Evidence 702.

1	Dated: January 9, 2014	By: /s/ George A. Riley
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		DEFENDANTS' MOTION TO EXCLUDE

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DEFENDANTS' MOTION TO EXCLUDE EXPERT TESTIMONY OF DR. LEAMER NO. 11-CV-2509 LHK

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28	DEFENDANTS' MOTION TO EXCLUDE

MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

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Plaintiffs bear the burden of proving at trial that each class member was injured by the alleged conspiracy, as well as the amount of damages. To satisfy this burden, Plaintiffs seek to rely on Dr. Leamer's "conduct" regression analysis and corresponding expert testimony both to show classwide impact and to estimate class member damages. But Dr. Leamer's analysis suffers from four critical flaws that render his opinions unreliable and inadmissible. Thus, the testimony should be excluded in its entirety under *Daubert* and Federal Rule of Evidence 702.

First, by generally accepted standards that Dr. Leamer has applied in the past, his results are statistically meaningless. In previous reports and testimony, Dr. Leamer repeatedly extolled the results of certain analyses as having statistical significance at standard thresholds—for example, that there was no more than a 5% probability that the result occurred by chance. As he put it, "[Y]ou're happier when the statistical uncertainty is small." (Declaration of Christina Brown in Support of Defendants' Joint Motion to Exclude the Expert Testimony of Edward Leamer, PH.D ("Brown Decl.") Ex. 3, Leamer Dep. at 1036:9-24.) Now he admits his impact and damages model does not meet these standard thresholds of statistical significance, meaning in his own words that it does not "yield accurate estimates." Ex. 7, Leamer May 2013 Rpt. ¶ 20; see also Ex. 4, Learner Dep. at 1257:23-1258:2. He tries to paper over this fatal flaw by inventing for the first time in his Reply Report a new, easier to satisfy, 50% threshold of statistical significance. This threshold—which is equivalent to determining whether there were billions of dollars in damages by flipping a coin—is contrary to well-established statistical analysis and finds no precedent in law or science. With no support for his newly invented 50% threshold, Dr. Leamer is reduced to arguing that "[a]bsent a better estimate, we need to rely on the best we have." Ex. 8, Leamer Oct. 2013 Rpt. ¶ 26. But "I can't do any better" is not the test for the admissibility of expert testimony. Dr. Leamer's model fails the "exacting standards of reliability" required for admissible expert testimony. Weisgram v. Marley Co., 528 U.S. 440, 455 (2000).

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¹ All exhibit ("Ex.") references are to the Declaration of Christina J. Brown in Support of Defendants' Joint Motion to Exclude Expert Testimony of Edward E. Leamer, PH.D.

Second, Dr. Leamer admits that his model cannot distinguish between lawful and allegedly unlawful restraints on recruiting during the class period and that the model finds impact and assesses damages based on both together. This shortcoming violates the Supreme Court's requirement in *Comcast* that his model "measure *only* those damages attributable" to Plaintiffs' liability theory. *Comcast Corp. v. Behrend*, 133 S. Ct. 1426, 1433 (2013) (emphasis added).

Third, Dr. Leamer's "total new hires" variable, which drives his impact and damages analysis, assumes each Defendant's employees experienced the same impact regardless of whether the Defendant was a party to one, two or three do-not-cold-call ("DNCC") agreements. This assumption is inconsistent with Plaintiffs' theory of harm, which is that parties to a bilateral DNCC agreement would see reduced cold calls as a result of that agreement, while Defendants who are not parties to that agreement would not. Dr. Leamer's model incorrectly fails to take into account the number of DNCC agreements a party had and the magnitude of the allegedly reduced recruiting activity. When these distinctions are properly introduced into his model, damages disappear. By relying on a key variable that assumes this effect was the same across all Defendants, Dr. Leamer's model is not "consistent with [Plaintiffs'] liability case," as required by *Comcast. Id.*

Finally, while Dr. Leamer relies on his regression model to prove alleged impact, he concedes it cannot show each class member was injured and cannot distinguish between any class members who were injured and those who were not. Plaintiffs cannot use such a model to satisfy their burden of proving classwide impact.

II. DR. LEAMER'S OPINIONS FAIL TO MEET THE STANDARDS OF *DAUBERT* AND FEDERAL RULE OF EVIDENCE 702

Expert testimony is inadmissible unless it is "based on sufficient facts or data" and "the product of reliable principles and methods" that the expert has "reliably applied . . . to the facts of the case." Fed. R. Evid. 702(b)-(d); *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993) (expert testimony must be "not only relevant, but reliable"). To be reliable, the expert's testimony must reflect scientific knowledge, findings driven by the scientific method, and work product that amounts to "good science." *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311,

1315 (9th Cir. 1995) ("Daubert II"). Rule 702 and Daubert impose "exacting standards of reliability," Weisgram, 528 U.S. at 455, and require the trial court to perform a gatekeeping function to exclude any expert opinion that fails to meet these standards. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141 (1999). Plaintiffs have the burden of proving its admissibility by a preponderance of the evidence. MySpace, Inc. v. Graphon Corp., 756 F. Supp. 2d 1218, 1234 (N.D. Cal. 2010).

A. Plaintiffs Rely on Dr. Leamer's Fatally Flawed Regression Model to Prove Impact to All Class Members and to Estimate Damages.

To prove their antitrust claims, Plaintiffs must establish (1) a violation of the antitrust laws; (2) individual injury resulting from that violation (antitrust impact); and (3) measurable damages. See In re Hydrogen Peroxide Antitrust Litig., 552 F.3d 305, 311 (3d Cir. 2008); In re Aftermarket Auto. Lighting Prods. Antitrust Litig., 276 F.R.D. 364, 368 (C.D. Cal. 2011). Plaintiffs must make a greater showing at trial than at the class-certification stage, where they only needed to show that "common evidence and common methodology could be used to prove the elements of the underlying cause of action." (Order Granting Mot. for Class Cert., Dkt. 531, at 24.) To prevail on the merits, Plaintiffs must now actually prove that every member of the class was injured by the alleged violation. Hydrogen Peroxide, 552 F.3d at 311. Calculating the total amount of damages the class as a whole allegedly suffered is not sufficient. "The ability to calculate the aggregate amount of damages . . . does not absolve plaintiffs from the duty to prove each [class member] was harmed by the defendants' practices." In re New Motor Vehicles Canadian Exp. Antitrust Litig., 522 F.3d 6, 28 (1st Cir. 2008).

Plaintiffs rely on Dr. Leamer's regression model both to show classwide impact and to estimate the damages to class members. As Dr. Leamer has described it, his regression analysis is a "methodology . . . for *showing impact* and calculating damages to the Defendants' workforces as a whole" Ex. 8, Leamer Oct. 2013 Rpt. ¶ 2 (emphasis added). When asked whether an alleged reduction in cold calls actually slowed the price discovery process, Dr. Leamer testified that he "will leave that to the regression . . . and will go to the data to decide whether it's actually there." Ex. 1, Leamer Dep. at 413:25-414:7. While he speculates that the absence of some cold

calls could have restricted information flow, he insists "we're going to have to ultimately fall back on regression models to determine the impact." *Id.* at 429:7-16.

B. Dr. Leamer's Model Is Unreliable Because It Produces Large Standard Errors and Relies on a 50% Threshold to Determine Statistical Significance That Is Equivalent to Flipping a Coin.

A regression model is a statistical method for using data to predict or estimate the average relationship between a "dependent" variable and one or more "independent" variables.

Dr. Leamer's regression model purports to measure the average effect of the six challenged DNCC agreements on compensation, holding other compensation-related variables constant.²

The centerpiece of Dr. Leamer's model is his general "conduct" variable that purports to measure the impact of the challenged DNCC agreements, holding other compensation-related variables constant. This variable does not actually measure anything specific to the alleged conduct at issue—such as the number of cold calls or the amount of information flow. Instead, the "conduct" variable is simply an "indicator" or "dummy" variable that is "turned on" when the challenged agreements were in effect. Thus, the conduct variable does nothing more than measure whatever changes in compensation are not attributed to the other compensation-related independent variables, regardless of what caused those changes.

A regression model's reliability depends on whether it can estimate with a reasonable degree of certainty the relationship between the variables; here, the average effect of the challenged DNCC agreements on employee compensation. Economists examine the statistical significance of their estimates to determine whether the results are sufficient to reject the so-called "null hypothesis" (here, that the agreements had no impact on compensation). *See* Leamer Dep. 1038:5-1039:18. If there is less than an X% probability the observed outcome (or

² Specifically, the model attempts to estimate the average relationship between compensation (the dependent variable) and the challenged DNCC agreements using what he calls "conduct variables," taking into account the effects of other variables that he says are related to compensation. Ex. 8, Leamer Oct. 2013 Rpt. ¶ 19 & Exs. 2-3. The model has four "conduct" variables. The most "critical" is the general conduct variable, which is primarily responsible for Dr. Leamer's estimated impact and damages. Ex. 3, Leamer Dep. 1044:12-17 (referring to the conduct coefficient as the "critical coefficient"). The model also includes variables representing the "interaction" between this general conduct variable and employee age, employee age squared, and the hiring rate at the employee's firm. *See* Ex. 5, Leamer Oct. 2012 Rpt. ¶¶ 141-148 & Figs. 23-24; Ex. 8, Leamer Oct. 2013 Rpt. ¶¶ 2, 20-21 & Exs. 2-3.

more extreme outcome) would have occurred simply due to chance, given the null hypothesis
(that the agreements have no impact), then the null hypothesis can be rejected at the X% level. If
there is more than X% probability that the result occurred by chance, the null hypothesis cannot
be rejected. Standard scientific practice is to set "X%", the statistical significance threshold, at
1%, 5%, or (most leniently) at 10% before performing any analysis to avoid the situation in which
the researcher inflates the statistical significance threshold to mask the unreliability of the
findings. Only where a model's results are statistically significant at the selected significance
level is it appropriate to reject the null hypothesis—here, to reject the hypothesis that the
agreements had no impact on compensation. See Stiroh Decl. ¶ 3.

The smaller the significance level, the greater the confidence that the null hypothesis has been correctly rejected. If the estimate is statistically significant at a 5% level, there is no more than 5% probability of wrongly finding an effect—that is, there is no more than 5% likelihood one would observe the alleged impact or damages estimate (or a bigger estimate) merely by chance. Generally accepted statistical doctrine—and Dr. Leamer's own writings in this case and elsewhere—holds that an estimate is not likely to be meaningful unless it is statistically significant at the 10% level. As Dr. Leamer explains, a statistical estimate that is less reliable than the 10% significance level is "not distinguishable from zero [the null hypothesis of no effect]." Ex. 7, Leamer May 2013 Rpt. ¶ 20.

When reporting his model's results, Dr. Leamer indicates whether they are statistically significant at the 1%, 5%, and 10% levels. *See*, *e.g.*, Ex. 8, Leamer Oct. 2013 Rpt. Exs. 2-3. Indeed, from the time he submitted his first expert report in October 2012, Dr. Leamer has repeatedly relied on the statistical significance of his various analyses at the 1%, 5%, or 10% levels. *E.g.*, Ex. 5, Leamer Oct. 2012 Rpt. Figs. 20 & 23; Ex. 6, Leamer Dec. 2012 Rpt. Figs. 12, 14 & 16-19; Ex. 7, Leamer May 2013 Rpt. Figs. 4-5 & 8; Ex. 8, Leamer Oct. 2013 Rpt. Exs. 2-6. Notably, the analyses he claims support his theory of classwide impact expressly relied on a "competition for statistical significance" among different variables. Ex. 5, Leamer May 2013 Rpt. ¶¶ 35-38, 47.

On the other hand, Dr. Leamer has judged results that did not meet the 10% level

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"statistically insignificant," "not distinguishable from zero," and unable to "yield accurate estimates." Ex. 5, Leamer May 2013 Rpt. ¶ 20; Ex. 2, Leamer Dep. at 593:2-3. He rejected results proffered by Defendants' experts that were contrary to his opinions because only "a small fraction" were statistically significant at the 10% level or below. Ex. 5, Leamer May 2013 Rpt. ¶ 37. In analyzing his correlation results for Adobe at the job title level, for example, he excluded titles with five or fewer years of data, because "correlations based on 5 or fewer observations are often statistically insignificant." *Id.* ¶ 52. He explained: "Titles that have fewer annual observations tend to produce what statisticians call 'statistically insignificant' results, meaning the data sets are too small *to yield accurate estimates*." *Id.* ¶ 20 (emphasis added). Nevertheless, having repeatedly embraced standard levels of statistical significance in this case, Dr. Leamer reverses course when attempting to defend his new 50% threshold for his regression results: "I have never depended on 'statistical significance' to support my conclusions in this case." Ex. 9, Leamer Dec. 2013 Rpt. ¶ 90.

1. Dr. Leamer's General Conduct Variable—the Independent Variable
That Allegedly Indicates Impact and Measures Damages—Lacks
Statistical Significance and Reliability.

The general conduct variable is "critical" to Dr. Leamer's model; as he acknowledges, it is the variable that drives the overwhelming share of damages. Leamer Dep. 1044:12-17. Yet Dr. Leamer concedes this "critical" conduct coefficient has a "large standard error" (essentially, a large statistical margin of error) and is therefore not statistically significant at the 1%, 5%, or 10% levels that he reports. Ex. 3, Leamer Dep. 1044:7-21, 1257:23-1258:2; *see also* Stiroh Decl. ¶ 4. The same is true of the coefficient on the conduct variable "interacted with" (i.e., multiplied by) the hiring rate per Defendant firm. Ex. 3, Leamer Dep. 1044:7-21.

Standard errors determine statistical significance, which as discussed above, indicates whether a model provides statistically reliable evidence that the true value of an estimate is different from zero. Stiroh Decl. ¶ 3. As Dr. Leamer explained, "that's another way of characterizing how much uncertainty there is in that particular coefficient . . . [a]nd you're happier when the statistical uncertainty is small." Ex. 3, Leamer Dep. 1036:9-24. That Dr. Leamer's conduct variables have a large statistical uncertainty indicates his model has not been

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able to estimate those variables with sufficiently reasonable precision to conclude their true value—or the impact of the challenged agreements—is different from zero. Stiroh Decl. ¶ 4.

Dr. Leamer admits the large standard errors and lack of statistical significance are critical flaws in his analysis. Yet he attempts to excuse them because the model is the "best" he could produce. In his October 2013 report, Dr. Leamer defended his results as follows:

A damage estimate with a large standard error will still be the best estimate, unless there is a more accurate alternative. While a large standard error means that the damages could be smaller, that same large standard error also means the damages could equally well be larger by the same amount. Absent a better estimate, we need to rely on the best we have.

Ex. 8, Leamer Oct. 2013 Rpt. ¶ 26 (emphasis added). Similarly, Dr. Leamer testified at his deposition that if a damages estimate "happens to have a large standard error and is still the best estimate, you're going to have to live with what is provided." Leamer Dep. 1034:3-20.

The rules of evidence do not allow the jury to "live with" Dr. Leamer's statistical "uncertainty" resulting in billions in alleged damages because he has nothing "better" to offer. To be admissible, expert testimony must meet "exacting standards of reliability." Weisgram, 528 U.S. at 455; Daubert II, 43 F.3d at 1315-16 (expert testimony must be "good science," and an opinion's high error rate supports its exclusion.). To simply be the best the expert can do is not enough; if it were, *Daubert*'s gatekeeping requirement would be meaningless. Expert opinions based on large standard errors and statistically insignificant results are inadmissible as failing this standard of reliability. See, e.g., In re Silicone Gel Breast Implants Prods. Liab. Litig., 318 F. Supp. 2d 879, 897-98 (C.D. Cal. 2004) (finding inadmissible expert's epidemiological evidence that implants were carcinogenic where his study had a large margin of error at the 95% confidence level, "render[ing] those findings meaningless for purposes of proving or disproving causation in a court of law"); Henricksen v. ConocoPhillips Co., 605 F. Supp. 2d 1142, 1168 (E.D. Wash. 2009) (excluding expert testimony regarding chemical exposure based on studies with small sample sizes and large potential rates of error); cf. In re Bextra & Celebrex Mktg. Sales Practices & Prod. Liab. Litig., 524 F. Supp. 2d 1166, 1181 (N.D. Cal. 2007) (admitting expert testimony that drug could cause heart attacks or strokes at certain doses because his study demonstrated a "statistically significant risk"). Dr. Leamer's admission that his model's

independent variable that drives both impact and damages is not statistically significant—or, in his words, capable of "yield[ing] accurate estimates"—requires exclusion of his testimony.

2. The Court Should Reject Dr. Leamer's Attempt to Justify His Unreliable Results Based on His New 50% Significance Threshold.

Dr. Leamer attempts to salvage his model by proposing for the first time in his December 2013 Reply Report an entirely new 50% threshold for statistical significance. At this threshold, one is willing to reject the null hypothesis that the agreements had no impact when there is as much as a 50% likelihood that one would observe the results of his regression model merely by chance. Ex. 9, Leamer Dec. 2013 Rpt. ¶ 86. In other words, he is willing to find billions of dollars in damages with a degree of statistical confidence that is no more reliable than if the same determination had been made by flipping a coin. It amounts to essentially no statistical test at all. Stiroh Decl. ¶ 6.

Dr. Leamer's unorthodox new 50% significance threshold contradicts standard economic practice and lacks any support in his own or anyone else's work that he could cite. Using a 50% threshold for statistical significance is counter to the best practice of the scientific community and "contrary to the standard practice for published and peer-reviewed economic literature." Stiroh Decl. ¶ 6. Dr. Leamer was unable to identify any economist who has ever endorsed the use of a 50% significance level under any circumstances. Ex. 4, Leamer Dep. 1256:7-11 ("Q: Are you aware of any other study or any literature that endorses the use of a significance level of 50 percent for type I error? A: Off the top of my head, I'm not familiar with one, no."). Nor could Dr. Leamer identify any other instance in which he has used a 50% significance approach. Ex. 4, Leamer Dep. 1260:23-1261:4. This peer review vacuum fails the *Daubert* test. An expert's analysis should be "supported by the typical *Daubert* factors—testing, peer review and general acceptance." *Wagner v. Cnty. of Maricopa*, 673 F.3d 977, 982 (9th Cir. 2012).

In his own academic work, Dr. Leamer acknowledges that a 50% significance level is akin to flipping a coin. Ex. 10, Edward E. Leamer, *Specification Searches: Ad Hoc Inference with Nonexperimental Data* 94 (1978) ("Flipping a coin to decide whether to [reject one's hypothesis] implies $\alpha = \beta = .5$ " where α refers to the probability of wrongly rejecting a null hypothesis that is

actually true). To properly admit expert testimony, a court must determine that the expert
"employs in the courtroom the same level of intellectual rigor that characterizes the practice of an
expert in the relevant field." Kumho Tire, 526 U.S. at 152; see also Daubert II, 43 F.3d at 1317
("One very significant fact to be considered is whether the experts are proposing to testify about
matters growing naturally and directly out of research they have conducted independent of the
litigation, or whether they have developed their opinions expressly for purposes of testifying.").
An expert's opinion is thus not reliable if the expert is not "being as careful as he would in his
regular professional work outside his paid litigation consulting." Sheehan v. Daily Racing Form,
Inc., 104 F.3d 940, 942 (7th Cir. 1997). Dr. Leamer's contrived 50% significance threshold does
not satisfy this standard. ³
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In contrast, the 1%, 5%, and 10% thresholds Dr. Leamer has used in every other report submitted in this case are consistent with standard economic practice. Stiroh Decl. ¶ 5; ATA Airlines, Inc. v. Fed. Express Corp., 665 F.3d 882, 895 (7th Cir. 2011) (noting that a 95% confidence interval—which reflects a statistical significance level of 5%—is "the standard criterion of reasonable confidence used by statisticians"); Contreras v. City of L.A., 656 F.2d 1267, 1273 n.3 (9th Cir. 1981) ("A .05 level of statistical significance indicates that the demonstrated relationship between the variables would occur in a random sample five times out of one hundred and is generally recognized as the point at which statisticians draw conclusions from statistical data."); Federal Judicial Center, Reference Manual on Scientific Evidence 252-52 (3d ed. 2011) (statistical analysts typically use significance levels of 5% and 1%). Dr. Leamer's 50% significance level was "conceived, executed, and invented solely in the context of th[e] litigation," and so is paradigm inadmissible junk science. Johnson v. Manitowoc Boom Trucks,

³This fatal problem arose from Dr. Murphy's criticism that Dr. Leamer failed to "cluster" the standard errors in his regression model, which Dr. Leamer at first dismissed but now concedes "has validity." Ex. 7, Leamer Oct. 2013 Rpt. ¶ 27. The Court previously stated "[that] the Conduct Regression's results are not statistically significant at the 95% level [with clustered errors] does not persuade the Court that the regression is inadmissible (though this failure might affect the model's probative value)." 4/5/13 Class Cert. Order at 42. However, Dr. Leamer now admits the results are not significant at *any* standard level on which he and all other statisticians rely. The Court "encouraged" Dr. Leamer to address the clustering problem. *Id.* at 42-43 n.15. His only response is to try to change the rules of statistical significance to avoid a finding that his model is unreliable.

Inc., 484 F.3d 426, 434-35 (6th Cir. 2007).

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Dr. Learner tries to defend his proposed 50% threshold because "[w]ith this significance level there is a relatively small 6% chance of deciding in the favor [of] the defense if actual damages were 10%." Ex. 9, Leamer Dec. 2013 Rep. ¶ 86 (emphasis added). But this requires a baseline assumption of 10% undercompensation in the first place. See Ex. 3, Leamer Dep. at 1037:14-16 ("the question isn't whether there's zero damages; the question is how large they are"). Dr. Leamer cannot rely on his model to prove there are billions in damages while simultaneously building the model on the assumption that there are billions in damages. "Obviously, a model cannot be used to prove one of its basic assumptions." In re TFT-LCD (Flat Panel) Antitrust Litig., 2012 U.S. Dist. LEXIS 21696, at *39 (N.D. Cal. Feb. 21, 2012); Craftsmen Limousine, Inc. v. Ford Motor Co., 363 F.3d 761, 777 (8th Cir. 2004) (expert report admitted in error where it assumed its conclusion and failed to analyze relevant factors). Dr. Leamer's assumption that damages were 10% deviates fundamentally from the accepted null hypothesis of zero, or no impact from the DNCC agreements. Stiroh Decl. ¶ 7; Ex. 3, Leamer Dep. at 1037:10-1038:4. Indeed, Dr. Leamer acknowledges that in his prior reports, he followed this standard scientific practice and calculated significance levels setting the null hypothesis to zero. Ex. 3, Leamer Dep. at 1038:5-19.

Dr. Leamer describes his regression model, with its large standard errors and lack of statistical significance at any defensible level, as the "best estimate" he can provide. Ex. 8, Leamer Oct. 2013 Rpt. ¶ 26. But this unreliable model and Dr. Leamer's opinions regarding impact and damages fail to meet the stringent standards of *Daubert* and Rule 702 and must be excluded. A jury cannot be permitted to make a finding of impact and damages against Defendants based on a flip of the coin.

C. Dr. Leamer's Model Cannot Distinguish Between Alleged Impact from the Challenged Agreements and from Conduct That Is Not at Issue.

Dr. Leamer's model fails *Comcast*'s requirement that it "measure only those damages attributable" to Plaintiffs' theory of liability, 133 S. Ct. at 1433, because it is incapable of segregating the alleged impact on compensation attributable to the challenged DNCC agreements

from the effects on compensation attributable to other factors not at issue here. Because the
conduct variable is simply turned on when the challenged agreements were in effect (and turned
off when they were not), it measures the aggregate effects on compensation of any events and
circumstances not otherwise controlled for by the model. Stiroh Decl. ¶ 14. As Dr. Leamer
admits, the conduct variable "will pick up anything that is applicable to that period of time when
the thing is turned on." Ex. 1, Leamer Dep. at 329:11-25. These include macroeconomic and
microeconomic effects, as well as the effect of other DNCC agreements and practices that are not
challenged here.

The Ninth Circuit has held that antitrust plaintiffs are required to "segregate damages attributable to lawful competition from damages attributable to" a defendant's alleged unlawful conduct. *Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1224 (9th Cir. 1997). Other courts have reached this same conclusion. Yet by his own admissions, Dr. Leamer's model fails this requirement. For example, Dr. Leamer's model cannot distinguish between the alleged effect of the challenged DNCC agreements and other restrictions on cold calling that were the product of concededly lawful agreements or unilateral policies during the class period. Several defendants had other DNCC practices or agreements in place during the class period that Plaintiffs do not claim were unlawful. For example, Intel had unchallenged (admittedly lawful) no-recruiting agreements with Apple and Pixar that began during the class period and ended contemporaneously with it. Ex. 11, Conrad Dep. at 82:4-83:3, 109:22-111:4; Ex. 12, Prajapati Dep. at 79:15-81:21, 149:7-162:14, 246:4-20. Google adopted DNCC policies with respect to two non-defendant companies effective January 20, 2006. Ex. 13, GOOG-HIGH-TECH-

⁴See e.g., Concord Boat Corp. v. Brunswick Corp., 207 F.3d 1039, 1056-57 (8th Cir. 2000) (expert testimony should have been excluded; "[t]he model . . . failed to account for market events that both sides agreed were not related to any anticompetitive conduct"); *In re Brand Name Prescription Drugs Antitrust Litig.*, 186 F.3d 781, 786 (7th Cir. 1999) ("to obtain damages the plaintiffs would have to separate the price effects of collusion from the price effects of the defendants' lawful market power"); *Blue Cross & Blue Shield United v. Marshfield Clinic*, 152 F.3d 588, 593 (7th Cir. 1998) ("Statistical studies that fail to correct for salient factors, not attributable to the defendant's misconduct, that may have caused the harm of which the plaintiff is complaining do not provide a rational basis for a judgment."); *In re REMEC Inc. Sec. Litig.*, 702 F. Supp. 2d 1202, 1273 (S.D. Cal. 2010) (excluding expert's regression model in part because it did not account for other possible causes of the alleged harm, including macroeconomic effects).

the DOJ's civil investigative demand in 2009. *See* Ex. 14, GOOG-HIGH-TECH-00057353. Under Dr. Leamer's theory that a reduction in cold calling leads to reduced compensation, these agreements and policies would also have had this effect and would be measured by his model and included in his damages estimate for the class period. Yet his model cannot distinguish between the effects of the challenged DNCC agreements and these other unchallenged agreements and practices that were coterminous with the class period. Stiroh Decl. ¶ 16. Dr. Leamer concedes this shortcoming. Ex. 1, Leamer Dep. at 340:6-15 ("[t]o the extent these [other restrictions] are coincident in time with . . . these [challenged] bilateral agreements they had, and to the extent that they suppress wages during that period of time, it's going to be picked up by the conduct variable unless there's some other control in the equation that accounts for that "). Dr. Leamer could not say how much of this unchallenged conduct his model is improperly counting as damages. *Id.* at 340:16-20. Because the model fails to disaggregate lawful from unlawful effects, it is unreliable and inadmissible. *See Concord Boat*, 207 F.3d at 1056-57; *Brand Name*, 186 F.3d at 786.

D. Dr. Leamer's Total New Hires Variable Is Inconsistent with Plaintiffs' Theory of Harm.

Plaintiffs' theory of the case is that the bilateral DNCC agreements restricted the amount of recruiting activity, and thus the amount of compensation information, that would otherwise flow between the parties to those agreements. Defendant pairs who were not parties to a DNCC faced no limitations on the amount of compensation information flowing between them.

Dr. Leamer admits each Defendant was free to cold call every other Defendant with which it had no bilateral DNCC agreement. Ex. 3, Leamer Dep. at 873:9-13, 875:13-876:3. Accordingly,

⁵ Dr. Leamer's model also cannot isolate the impact of the DNCC agreements on compensation from other significant events during the class period. For example, his model estimates include the impact of the 2008-2009 recession, which would have negatively impacted compensation. Stiroh Decl. ¶ 15. When Dr. Stiroh accounts for this, using a technique that Dr. Leamer used in his initial report, the alleged damages produced by the model are reduced by more than half—thus indicating that these recession years contribute to more than half of Dr. Leamer's alleged damages estimate. *Id.* Dr. Leamer's model likewise cannot isolate or account for the effects of Defendants' different responses to the recession in setting compensation. *Id.*

under Plaintiffs' theory the impact of a Defendant's increased recruiting and hiring (for whatever reason) on another Defendant would depend on whether there was a DNCC agreement between those two firms. Thus, under this theory, the impact of an increase in recruiting and hiring activity at Intel would be different with respect to an employee at Google (which had a DNCC with Intel) than it would be for an employee at Adobe (which did not have a DNCC with Intel).

Dr. Leamer's model, however, is fundamentally at odds with Plaintiffs' theory of the impact of the DNCC agreements. Dr. Leamer's model uses a "total new hires variable" that is the sum of all new hires by *all* Defendants in a given year. For each year, he applies this same variable to every employee in the class regardless of employer. *See* Ex. 8, Leamer Oct. 2013 Rpt. ¶ 19 & Figs. 2-3; Stiroh Decl. ¶ 8. Thus, he assumes the impact of increasing hiring by all Defendants is the same on an employee at Google (which had three DNCC agreements) as it was on an employee at Adobe (which had only one DNCC).

This error is crucial because the total new hires variable is responsible for the vast majority of Dr. Leamer's alleged damages. To correct Dr. Leamer's error, Dr. Stiroh properly split the variable to match Plaintiffs' theory and reflect new hiring by firms that had DNCC agreements with each other separately from new hiring by firms that did not have such agreements with each other. Dr. Stiroh also interacted the DNCC new hires variable with Dr. Leamer's general conduct variable. When these distinctions are made, the result shows greatly decreased damages or *over*compensation by Defendants during the class period, depending on the specification. Stiroh Decl. ¶ 10 & Exs. VI.7-8 and VI.11-12. Thus, Dr. Leamer's alleged damages depend on his use of the improperly aggregated new hires variable; without it, they disappear. There is no justification under any economic theory for this error. Dr. Leamer's regression model is inconsistent with Plaintiffs' theory of liability and fails to meet the *Comcast* standard. 133 S. Ct. at 1433.

Additionally, the coefficient on the total new hires variable in the model is negative, indicating a negative relationship between Defendants' total hiring and employee compensation, i.e., as hiring increases among the Defendants, compensation declines, all other things being equal. Ex. 8, Leamer Oct. 2013 Rpt. Exs. 2-3; Stiroh Decl. ¶ 11. The implication—as

Defendants hire more employees, they pay their employees less—is contrary to basic economic principles and makes no sense. It is inadmissible on that basis as well. *See Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

In his reply report, Dr. Leamer attempts to defend his total new hires variable and its negative coefficient as identifying periods of weak labor markets—a spike in new hiring in 2005, followed by a decrease in hiring in 2006 and 2007. Ex. 9, Leamer Dec. 2013 Rpt. ¶ 119. But this movement is driven almost entirely by a single Defendant, Intel, which accounts for nearly two-thirds of the class. *See* Ex. 9, Leamer Dec. 2013 Rpt. Table 1 (Intel employed 40,357 out of the 64,613 class members). Intel experienced a significant spike in new hiring in 2005, followed by a decrease in 2006 and 2007, as Dr. Leamer's total new hires variable indicates. But other Defendants, such as Google, *increased* their hiring in 2006 and 2007, which is inconsistent with Dr. Leamer's explanation of the negative coefficient. *See* Stiroh Decl. Ex. 114. By using one variable for total new hires across all Defendants, Dr. Leamer's model makes Intel's hiring a predictor of compensation at the other six Defendants, even though they have very different hiring patterns and different alleged DNCC agreements.

The fact that the model is so sensitive to changes in Intel's hiring reveals a fundamental flaw: the damages allegedly caused by DNCC agreements between other Defendants turns on Intel's behavior, even though five of the seven Defendants had no challenged DNCC agreements with Intel. For example, changing the start date of Intel's alleged participation has an enormous and irrational influence on the estimates of Dr. Leamer's model. Dr. Leamer assumes Intel's one alleged DNCC agreement, with Google, began in 2005. Yet evidence indicates that there was no agreement between Google and Intel concerning cold calling until 2006. Re-estimating the model using a start date of 2006 for Intel reduces Dr. Leamer's total alleged damages by over \$1 billion—and it reduces the alleged damages for all seven Defendants, including the five Defendants who do not have any challenged DNCC agreement with Intel. Stiroh Decl. ¶ 13 & Exs. VI.3 and VI.4.6 This result dramatically demonstrates that the model fails to meet the

⁶Defendants do not ask the Court to resolve this dispute regarding the alleged start date of the Intel-Google DNCC agreement. Rather, the enormous effect this relatively minor change has on Dr. Leamer's model underscores its inherent unreliability.

"exacting" reliability standards of *Daubert* and its progeny. Weisgram, 528 U.S. at 455.

E. Dr. Leamer Cannot Rely on His Regression Model to Establish the Existence of Classwide Impact When He Admits the Model Is Incapable of Showing Each Class Member Was Injured.

Dr. Leamer concedes his regression model cannot satisfy Plaintiffs' burden of proving that each member of the class was in fact injured. Nor can the model calculate the amount of any class member's damages. Dr. Leamer admitted at his October 2012 deposition that his model cannot determine whether any class member was injured. Ex. 1, Leamer Dep. 44:10-2, 57:5-11. Dr. Leamer confirmed at his November 2013 deposition that his model cannot determine impact or damages for individual class members. Ex. 3, Leamer Dep. at 954:2-4 ("I didn't build a model that was intended to disaggregate individual-by-individual."); *Id.* at 957:12-18 ("Q: So your model cannot be correctly applied to determine the alleged damages for any individual? A: That's correct").

In essence, Dr. Leamer relies on his model to do what he has admitted it cannot do: prove injury to all class members despite admitting it cannot measure injury to individuals. As such, his opinions are unreliable for their proffered purpose, lack scientific rigor, and are inadmissible. *See In re Plastics Additives Antitrust Litig.*, 2010 WL 3431837, at *16 (E.D. Pa. Aug. 31, 2010) (regressions were not proof of classwide impact where expert admitted they did "not show that each and every class member was impacted by the alleged conspiracy"); *Joiner*, 522 U.S. at 146 ("[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered."). Dr. Leamer's opinion that there was classwide impact must be excluded.

III. CONCLUSION

For the reasons set forth above, Dr. Leamer's proposed testimony regarding alleged impact and damages is unreliable and should be excluded in its entirety.

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ATTESTATION Pursuant to General Order 45, Part X-B, the filer attests that concurrence in the filing of this document has been obtained from all signatories. By <u>/s/ George A. Riley</u> George A. Riley